REMARKS

Status of claims

Claims 7-13 are pending. The Examiner noted that the numbering of claims in applicants' Preliminary Amendment filed on December 30, 2001 was not consistent with 37 CFR 1.126 requiring the original numbering of claims to be preserved throughout prosecution. Specifically, the aforementioned Preliminary Amendment purported to cancel claims 1-4 and present "new" claims 5-11 when, in fact, claims 1-6 were pending. The Examiner assumed that claims 1-6 were cancelled, and renumbered the erroneously numbered "new" claims 5-11 set forth in the above-cited Preliminary Amendment as claims 7-13. The Examiner is correct in assuming that claims 1-6 were cancelled. Applicants have adopted the Examiner's renumbered claim set wherein the Examiner renumbered the pending claims as claims 7-13. Appropriate corrections have been made herein to the dependency clauses of claims 8-13.

Overview of the Office Action

The Examiner objected to the specification because pages 1, 2, 3 and 4 of the specification included references to claims by number. Claims 7 and 9 stand rejected under 35 USC 103(a) as being unpatentable over admitted prior art in view of Nishimura, U.S. Patent No. 4,537,245. Claims 8 and 11 stand rejected under

35 USC 103(a) as being unpatentable over admitted prior art in view of Nishimura as applied to claim 7, and further in view of Cope, U.S. Patent No. 5,121,291. Claims 10 and 13 stand rejected under 35 USC 103(a) as being unpatentable over admitted prior art in view of Nishimura as applied to claim 7, and further in view of Ko, U.S. Patent No. 5,940,269. Claim 12 stands rejected under 35 USC 103(a) as being unpatentable over admitted prior art in view of Nishimura and Cope as applied to claim 8, and further in view of Ko as applied to claim 10. Reconsideration and withdrawal of these rejections are respectfully solicited in light of the following remarks.

Descriptive summary of the invention

The following summary is based on the specification. It is provided only for the convenience of the Examiner, and is not intended to argue limitations which are not claimed.

The cooling device of the present invention is provided with a plurality of thermal zones which interact thermally with one another. For example, FIG. 6 depicts "Enclosed thermal zone (CPU)" and "Thermal zone (entire system)". Each of these two thermal zones contains a heat source (FIG. 6, CPU and System), as well as a sensor (FIG. 6, "Actual temperature of CPU" and "Actual temperature of entire system"). Each of the two thermal zones also includes a cooling mechanism (FIG. 6, "CPU fan actuator" and

"system fan actuator"), as well as a controlling element ("CPU temperature controller" and "system temperature controller") connected to the associated temperature sensor for activation of the cooling mechanism. The outputs of at least one of the controlling elements is connectable to the two cooling mechanisms via an allocation matrix (FIG. 6, "Matrix") that provides connections between the controlling elements and each of the cooling mechanisms. Thus, one temperature sensor via its associated controlling element can be used for controlling two cooling elements.

Independent claim 7 is patentable over the prior art

Nishimura discloses a passenger motor vehicle having a passenger compartment with four thermal zones. A temperature control device is provided in each zone for controlling the temperature in these zones. The Examiner argues that it would have been obvious to one of ordinary skill in art to have modified a system which the Examiner calls "the admitted prior art system" (i.e., shown in applicants' FIGs. 1 and 3) by adding various features disclosed in the Nishimura patent.

In accordance with the invention as recited in claim 7 and shown, for example, in FIG. 6, an increasing temperature of the CPU is reported to the controlling element for the CPU-temperature. Due to the allocation matrix provided in accordance

with the present invention, the one controlling element for the CPU-temperature can send control signals to both the CPU-fan and the system-fan. This is significant considering the fact that the CPU-fan and the system-fan influence the temperature of the CPU together.

Nishimura does not disclose at least the following claimed features of the present invention for a plurality of thermal zones:

1. a controlling element for each of a plurality of thermal zones,

2. at least two cooling means for different ones of the thermal zones, and

3. an allocation matrix coupling an output of one of said controlling elements to said two cooling means.

The arrangement disclosed in FIG. 3 of Nishimura comprises only one cooling means (fan 12 in combination with evaporator 13). Although several temperature sensors 56-1…56-4 are provided, all of these temperature sensors are involved in calculating one control signal for the one and only fan 12.

As described in FIG. 3 of Nishimura, there is no allocation matrix by which one of the controlling elements can be connected to more than one cooling mechanism. For example, if the temperature in zone 1 of Nishimura is higher than it should be, the air temperature of air-flow to zones 1 and 3 is affected (see steps 102, 103 and 104). Thus, Nishimura teaches that at least

two temperature sensors can be used for calculating a control signal for one cooling mechanism. This is in contrast to the present invention as recited in claim 7 which specifies that one temperature sensor is used, via its associated controller, for controlling two cooling mechanisms. Thus, the features of claim 7 are not disclosed in the "admitted prior art" in combination with Nishimura. Accordingly, it is submitted that the subject matter of claim 7 is clearly unobvious thereover.

In addition to the arguments presented above, it must also be noted that Nishimura has been drawn from a non-analogous art, namely automotive cooling systems. Claim 7 has been amended herein to specify a cooling device for a computer system. Therefore, a person skilled in the relevant art pertinent to the present invention would not have employed the techniques disclosed in Nishimura to improve a cooling device used in a computer system. Nishimura lacks any teaching whatsoever as to how an automotive cooling system for cooling the passenger compartment of a car could be adopted to cool a computer system. Indeed, the operational environment, problems and techniques applicable to cooling of an automobile differ dramatically from that applicable to a computer system. Nishimura fails to disclose a cooling technique that could be applied to a computer system. This is not surprising because a person skilled in the art of computer systems would not look for solutions in the field of cooling of

motor vehicle compartments if he has a problem in cooling electrical components of a computer system. Therefore, Nishimura cannot be applied as a reference against the present invention.

Dependent claims

The remaining claims depend from claim 7 and, therefore, each is allowable therewith. In addition, these dependent claims include features which serve to further distinguish the claimed invention over the prior art. For example, claims 8 and 11 recite the cooling device of claim 7 further comprising a maximum-value generator for recognition of critical conditions and connected between a plurality of controlling elements and the at least one cooling means. Neither Nishimura, nor Cope, nor applicants' admitted prior art disclose or suggest such limitations. Therefore, it is respectfully submitted that claims 8-12 are allowable.

Conclusion

Based on all of the above, it is respectfully submitted that the present application is now in proper condition for allowance. Prompt and favorable action to this effect and early passing of this application to issue are respectfully requested.

Should the Examiner have any questions, comments, suggestions or objections, the Examiner is respectfully requested to telephone

the undersigned in order to facilitate reaching a resolution of any outstanding issues.

It is believed that no fees or charges are required at this time in connection with the present application. However, if any fees or charges are required at this time, they may be charged to our Patent and Trademark Office Deposit Account No. 03-2412.

SPECIAL NOTE:

Attached hereto is a copy of the Form PTO 1449 which was returned by the Examiner. As is readily apparent, the publication identified as "AW" has not yet been initialed by the Examiner to indicate that it has been considered and made of record. The Examiner is respectfully requested to do so, and to return the initialed form to the undersigned.

Respectfully submitted,

COHEN, PONTANI, LIEBERMAN & PAVANE

By _____

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Dated: December 13, 2004

Form PTO 1449 (Modified) U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE

LIST OF REFERENCES CITED BY APPLICANT

ATTY DOCKET NO.	SERIAL NO.
216269US2PCT	10/019,426
APPLICANT: Robert GERSTNER, et al.	
FILING DATE: December 31, 2001	GROUP

U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE IF APPROPRIATE
	AA	5 121 291	06/09/92	Christopher W. GARDNER et al.			
	AB	5 764 506	06/09/98	Bruno EYNAUD			
	AC	4 817 865	04/04/89	Donald L. WRAY			
	AD	5 718 628	02/17/98	Hideaki NAKAZATO et al.			
	AE						
	AF						
	AG						
	AH						
	AI						
	AJ						
	AK						
	AL						
	AM						
	AN						

FOREIGN PATENT DOCUMENTS

		DOCUMENT NUMBER	DATE	COUNTRY	TRANSLATION YES	TRANSLATION NO
	AO	08 316674	11/29/96	JP		No
	AP	43 09 187	06/16/94	DE		No
	AQ					
	AR					
	AS					
	AT					
	AU					
	AV					

OTHER REFERENCES (Including Author, Title, Date, Pertinent Pages, etc.)

	AW	"Intelligentes Power Management der neuesten Generation" http://www.andygrove.com/deutsch/mobile/mobilePCs/acpimen.html 06/21/99
	AX	
	AY	
	AZ	

☐ Additional References sheet(s) attached

Examiner: Mary B. Tamm — Date Considered: 8/5/04

*Examiner: Initial if reference is considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.